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Remarks

Claims 26-55 are pending in the application.

Claims 32, 42, 46, 47 and 53-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 26-31, 33-41, 43-45, and 48-52 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,853,642 issued to Otani et al.

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewriting to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the

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original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

Objection to Claims 32, 42, 46, 47, and 53-55

Claims 32, 42, 46, 47, and 53-55 were objected to, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For at least the reasons discussed herein, claims 32, 42, 46, 47, and 53-55 are allowable.

Rejection Under 35 U.S.C. 102

Claims 26-31, 33-41, 43-45, and 48-52 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,853,642 issued to Otani et al.

In general, Otani teaches a phase-controlled demodulator. As taught in Otani, a modulated digital input signal is received by a quadrature detector 102. The quadrature detector 102 performs quadrature demodulation to output an in-phase (I) component of the digital input signal and a quadrature (Q) component of the digital input signal. The quadrature detector 102 uses the output of VCO 104 in order to recover the carrier signal of the digital input signal for use in outputting the in-phase (I) and quadrature (Q) components of the digital input signal. The quadrature detector 102 provides the in-phase (I) and quadrature (Q) components of the digital input signal to a phase detector 103. The phase detector 103 detects a phase difference between the in-phase (I) component of the digital input signal and the quadrature (Q) component of the digital input signal.

By contrast, Applicant's invention clearly claims a phase comparator responsive to a PLL input signal and a PLL output signal. As taught in Applicant's invention, the phase comparator is responsive to the PLL input and output signals by detecting a difference between the PLL input signal and the PLL output signal. Furthermore, in contrast to Otani, Applicant's invention includes an oscillator responsive to a control signal by producing a PLL output signal. In other words, the output of the oscillator is provided as input to the phase comparator to detect a difference between the PLL input signal and the PLL output signal.

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The detection of a phase difference between two components of an input signal, as taught in Otani, is simply not detection of a phase difference between an input signal to a PLL and an output signal of a PLL, as taught in Applicant's invention of at least claim 26. Furthermore, use of a VCO output signal to recover a carrier signal, as taught in Otani, is simply not use of an oscillator output signal as input to a phase comparator, as taught in Applicants' invention of at least claim 26. As such, Otani fails to teach or suggest each and every limitation of Applicant's invention, as arranged in the claim.

Since all of the dependent claims that depend from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable over Otani et al. under 35 U.S.C. 102.

Secondary References

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to Applicant's disclosure than the primary references cited in the Office Action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this Office Action.

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Conclusion

It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

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